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November 7, 1984

RP:0046

District Engineer (PODCO-O)
U.S. Army Corps of Engineers
Building 230
Fort Shafter, Hawaii 96858

Dear Sir:

Corps of Engineers Permit
Hilo Ocean Outfall
Hilo, Hawaii

The proposed activity for which a Corps permit is being sought is an extension of the existing municipal sewage outfall in Hilo Bay by about 2915 feet, intended to result in better water quality in Hilo Bay. The Environmental Center review of the proposal has been compiled from comments received from Keith Chave, Oceanography; Robert Grace, Engineering; Hans Krock, Ocean Engineering/Look Laboratory; and Jacquelin Miller, Environmental Center.

Our major concerns are with whether the proposed extension will actually result in significant improvement in the water quality of Hilo Bay and with whether whatever improvement will result could not be achieved at a cost materially less than that of the proposed project.

The present outfall extends to a depth of about 56 feet off Puhi Bay and outside the Hilo Breakwater. With the 2915-foot extension north-northwest as proposed, the discharge (through a 264-foot diffuser) would be at a depth of about 80 feet. The same depth could be reached by an extension of about 1275 feet, less than half the extension proposed, if the extension were on the present alignment, due north, or by a still shorter extension to the northeast. It is our understanding that, by rule-of-thumb, the costs of pipe of the size to be used and installation as proposed will total about $3000 per foot. It thus appears that with an alignment different from that proposed, a saving of about $5 million or more might be achieved.

The treated sewage effluent being less dense than seawater, will, as at present, rise to the surface, diffusing during its rise. With the greater depth of release and with the installation of the diffuser, there will be more effective diffusion before the effluent reaches the surface than at present. However, the total input of nutrients and other contaminants to the Bay waters will remain unchanged, and the predominantly on-shore winds will tend to keep the diffused effluent in the bay.

The notice of the application for a Corps permit cites a plan for long-term monitoring of the effects of the effluent discharge. We suggest that, from the chemical/biological standpoint, total phosphorus and chlorophyll a are likely the most important constituents to be monitored, assuming that the project is implemented. Similarly, current studies are of importance in determining mixing and horizontal and vertical excursions of the effluent under various oceanographic conditions.

While consideration of hurricane wave forces is certainly appropriate and necessary, as is proposed in the design of the outfall extension, we suggest that attention to the tsunami hazard is equally important and should be included in the design.

Unless it can be reasonably well shown that a significant improvement to the bay waters will occur, the cost does not seem to justify the environmental benefit for the project as proposed.

Yours truly,

Doak C. Cox
Director

cc: OEQC
Keith Chave
Bob Grace
Hans Krock
Jacquelin Miller